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# Lung Disease Overview

## Q: Why are the lungs important?

**A:** Our lungs allow us to breathe and get oxygen into the bloodstream and the cells of our bodies. During a normal day, we breathe nearly 25,000 times, and take in (or inhale) large amounts of air. The air we take in is mostly oxygen and nitrogen. But air also has things in it that can hurt our lungs—bacteria, viruses, tobacco smoke, car exhaust, and other air pollutants. Lung disease is not only a killer, it can be life-long (or chronic). More than 30 million Americans are now living with lung disease.

## Q: What types of diseases can affect the lungs?

**A:** There are many types of lung diseases. The following diseases that can affect the lungs are grouped according to how they affect the lungs.

- *Asthma, chronic bronchitis, emphysema, and cystic fibrosis.* These all affect a person's airways and limit or block the flow of air in or out of the lungs.
- *Respiratory failure, pulmonary edema, pulmonary embolism, and pulmonary hypertension* (high blood pressure). These are caused by problems with the normal gas exchange and blood flow in the lungs.
- *Pneumonia and tuberculosis* (TB). Bacteria or viruses can cause these

diseases that affect the membrane (or *pleura*) that surrounds the lungs. Other infections can also affect the pleura.

- *Lung cancer.* The number one cause of lung cancer is smoking. And the number of women with lung cancer is rising, particularly in younger women. Lung cancer is the leading cancer killer of American women.
- Stiffening and scarring of lungs. The spaces between the tissues of the lungs (called the *interstitium*) can become stiff and scarred. This can be caused by drugs, poisons, infections, or radiation.
- Lung disorders from unusual atmospheric pressure. Atmospheric pressures that are not typical can cause lung disorders, or lung problems. This includes high altitudes (like in the mountains) where the air has less oxygen, or deep water where there is more atmospheric pressure and higher nitrogen levels in the blood.

Common symptoms, or signs, of lung disease include trouble breathing and shortness of breath, while feeling as if you are not getting enough air. People often complain of a long-term cough that will not go away, coughing up blood, and having pain when inhaling (breathing in) or exhaling (breathing out).

## Q: What causes lung disease?

**A:** Known causes of lung disease include:

- Smoking. If you smoke, talk with your health care provider about the steps you can take to quit smoking. If you live with someone who



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smokes, talk with him or her about quitting. Being around second-hand smoke also increases your chances of getting lung disease. Bear in mind that smoking includes not just cigarettes, but cigars and pipes as well.

- Exposure to radon gas. Radon, a gas that occurs in the soil and rocks, can damage the lungs, which may lead to lung cancer. People who work in mines may be exposed to radon, and in some parts of the U.S., radon is found in houses. You can measure radon in your home with a kit you can buy at most hardware stores.
- Asbestos. Asbestos is natural fiber that comes from minerals. The fibers tend to break apart easily, into small particles that can float in the air and stick to clothes. When a person inhales these particles, they can stick in the lungs, damage cells, and lead to lung cancer. Asbestos workers in jobs like shipbuilding, asbestos mining and manufacturing, car repair (brake repair), and insulation work should wear protective clothing. Asbestos workers who also smoke have an even higher risk for lung cancer.
- Pollution. Research shows a link between lung cancer and certain air pollutants, such as car exhaust. More studies are needed to find out if pollution causes lung cancer.

Some lung diseases, such as tuberculosis (TB), put a person more at risk for lung cancer. Lung cancer tends to develop in the areas of the lung that are scarred from TB.

### **Q: Which lung diseases are the most common in women?**

**A:** The most common lung diseases in women include:

- Asthma – a disease in which the lung airways are inflamed (swollen) and react easily to certain triggers like viruses, smoke, dust, mold, animal hair, roaches, or pollen. The inflamed airways get narrow and make it hard to breathe. You can have chest tightness, wheezing, shortness of breath, or a cough that never seems to go away or gets worse over time. More women than ever before are dying from asthma because more women have taken up smoking in the last 20 years.
- Chronic obstructive pulmonary disease (COPD) – a term used to describe two closely related lung diseases, *emphysema* and *chronic bronchitis*. Often, people have these diseases together. Chronic bronchitis is an inflammation that ends up scarring the lining of the *bronchial tubes* (tubes that make up the inside of the lungs). Women have higher rates of chronic bronchitis than men. Emphysema causes the walls between the air sacs within the lungs to become weak and break, making it hard for you to feel like you get enough air. While more men suffer from emphysema than women, it is increasing in women. Symptoms can include a cough that never seems to go away or that gets worse over time, increased mucus, a frequent need to clear your throat, shortness of breath, or trouble exercising.



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- Lung cancer – when abnormal (*malignant*) cells divide with control in the tissues of the lung and also can invade nearby tissues or spread through the bloodstream and to other parts of the body. There are two types of lung cancer: *non-small cell lung cancer* (cancer cells form in the tissue of the lungs) and *small cell lung cancer* (most often found in people who smoke or who used to smoke cigarettes). See your health care provider if you have any of these signs of lung cancer: a cough that doesn't go away or gets worse over time; constant chest pain; coughing up blood; hoarseness or wheezing; on-going problems with bronchitis or pneumonia; swelling of the neck and face; loss of appetite or weight loss; and extreme fatigue.

**Q: How is asthma diagnosed and treated?**

**A:** Asthma can be diagnosed with these tests: *spirometry* (measures how open your airways are); *chest x-ray* (looks at the condition of your lungs); and *electrocardiogram* (sees if heart disease is causing your symptoms).

While asthma cannot be cured, it can be managed. You can often control asthma by taking any prescribed medicines that open the lung airways and treat inflammation. Types of asthma medicines include *bronchodilators* (to prevent asthma attacks and to stop attacks after they have started) and *anti-inflammatories* (to help control airway inflammation and prevent attacks). Common anti-inflammatory drugs are *cromolyn*, *nedocromil*, and *corticosteroids*. Anti-leukotrienes are oral medicines used to treat chronic asthma by fighting the

inflammatory response to allergies. If you have asthma, it is important to stay away from triggers and see your provider regularly.

If you are pregnant, it is very important to manage your symptoms to prevent an attack. Asthma tends to worsen in the late second and early third trimesters, but some women may have fewer symptoms during the last four weeks of pregnancy. Not taking care of your asthma can threaten your baby's growth and survival. Besides taking your medications and avoiding triggers, you can get a flu shot after the first three months of pregnancy, and exercise only moderately, under the supervision of your health care provider regularly.

**Q: How is chronic obstructive pulmonary disease (COPD) diagnosed and treated?**

**A:** To diagnose COPD, your health care provider will ask you about your family and personal history, and do a physical exam. She or he may ask you to have *pulmonary function tests*, which find out: the amount of air in the lung (called lung volume); the rate of oxygen and carbon dioxide exchange; and the amount of oxygen and carbon dioxide in your blood. Lung volumes are measured by breathing into and out of a device called a *spirometer*. Researchers are still looking for a way to figure out a person's chances of developing COPD, because none of the current tests find the disease before lung damage that cannot be repaired occurs.

As COPD gets worse over time, it can cause you to become unable to carry out your daily routine. At the very



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least, it causes shortness of breath that can make you need oxygen. Treatments can include *bronchodilators* (drugs used to open up air passages in the lungs), antibiotics, and exercise to strengthen muscles. Women with COPD can also get help through *pulmonary rehabilitation*, a program that helps people to cope physically and mentally with the disease. When you have COPD, it is important not to smoke. Talk with your provider if you do smoke and need help with quitting. For individuals with severe symptoms, lung transplants may be an option. *Lung volume reduction surgery* (a number of different types of surgeries that removes part of the lung) also is showing promise for some individuals in the last stages of emphysema.

**Q: How is lung cancer diagnosed and treated?**

**A:** Your health care provider will look at your medical history, smoking history, exposure to substances, and a family history of cancer. You will also have a physical exam and maybe a chest x-ray and other tests. Your provider may order a *bronchoscopy*. During this test, a special instrument is inserted into your bronchial tubes to view the tubes and take a *biopsy* (remove cells or tissue) to see if there are cancer cells present.

As with other types of cancer, lung cancer can be treated in a number of different ways, including surgery, radia-

tion, and chemotherapy. The kind of treatment depends on the stage or extent of the cancer, the individual's age, and overall health. Most lung cancer is hard to treat. The best way to fight lung cancer begins when you are young and well—by making the decision never to smoke.

**Q: What can I do to lower my risk of lung disease?**

**A:** You can reduce your risk for getting lung disease. Things you can do include:

- Do not smoke cigarettes or other tobacco products and quit if you do smoke. Ask your health care provider for help with quitting smoking.
- Try to stay away from dust and irritants that can harm your lungs. If you must work near them, wear devices like masks to protect yourself.
- Have a *spirometry* test done as often as your health care provider suggests. This test looks at how much and how quickly you let out air after a deep breath.

See your health care provider right away if you are having trouble breathing, having pain in the lungs, are coughing up blood, or have any of the symptoms described in this FAQ. ■



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### *For more information . . .*

You can find out more about lung disease by contacting the National Women's Health Information Center (NWHIC) at (800) 994-9662 or the following organizations:

**National Heart, Lung, and Blood  
Institute**

Phone Number(s): (301) 592-8573

Internet Address:

<http://www.nhlbi.nih.gov/index.htm>

**American Lung Association**

Phone Number(s): (800) 586 4872

Internet Address: <http://www.lungs.org>

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